

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-163304

(43)Date of publication of application : 18.06.1999

(51)Int.Cl.

H01L 27/115
H01L 21/76
H01L 21/8247
H01L 29/788
H01L 29/792

(21)Application number : 09-327980

(71)Applicant : TOSHIBA CORP

(22)Date of filing : 28.11.1997

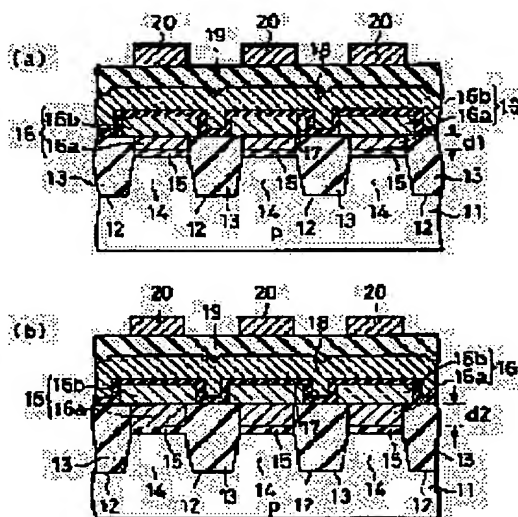
(72)Inventor : NARITA KAZUHIRO
SHIMIZU KAZUHIRO
WATANABE TOSHIHARU
ARITOME SEIICHI

(54) NONVOLATILE SEMICONDUCTOR STORAGE DEVICE AND MANUFACTURE THEREOF

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an EEPROM, in which coupling capacity between a floating gate and a control gate is increased, and the dispersion of memory-cell characteristics based on in-plane dispersion in the etch-back process of an element-isolation insulating film can be reduced.

SOLUTION: A tunnel oxide film 15 and a first conductive layer 16a are laminated on a substrate 11, a mask material for partitioning an element region 14 is formed onto the first conductive layer 16a in a pattern, the first conductive layer 16a and the tunnel oxide film 15 are etched successively, and the substrate 11 is etched to a specified depth to form grooves 12. Element-isolation insulating films 13 are deposited, while leaving the mask material, the insulating films 13 are CMP-polished so that the mask material under insulating films 13 is removed completely and the face of the first conductive layer 16a is exposed being flush with the plane of the insulating films 13, second conductive layers 16b constituting floating gates 16 together with first conductive layers 16a are deposited on the first conductive layer 16a and the insulating films 13, slits for isolation are worked on the second conductive layers 16b for isolation, and a control gate 18 is formed via an ONO film 17.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision
of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office